

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A4-219PCT	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/US2004/028885	International filing date (<i>day/month/year</i>) 07.09.2004	Priority date (<i>day/month/year</i>) 09.09.2003	
International Patent Classification (IPC) or national classification and IPC H01R13/453			
Applicant MOLEX INCORPORATED et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 3 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 22.03.2005		Date of completion of this report 25.10.2005	
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div> </div>		Authorized Officer Jiménez, J Telephone No. +31 70 340-2871	



INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITYInternational application No.
PCT/US2004/028885

AP20 Rev'd PCT/P10 24 FEB 2006

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-8 as originally filed

Claims, Numbers

1-10 received on 22.03.2005 with letter of 14.01.2005

Drawings, Sheets

1/10-10/10 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/028885

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-10
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/US2004/028885

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document) an electrical connector for mating with a complementary connecting device having a mating portion, comprising:

a shell (2) having an internal cavity, a front opening for receiving the mating portion of the complementary connecting device inserted into the cavity;
a housing (1) mounted in at least a rear portion of the shell (2) and having a mating portion extending forwardly into the cavity, and a plurality of stopper tabs (25); and
a shutter (3) slidably mounted in the internal cavity of the shell and formed with a passage (33) for receiving the forwardly extending mating portion of the housing (1) therethrough, whereby when the mating portion of the complementary connecting device is inserted into the cavity through the front opening in the shell (2), the shutter (3) is slidably pushed rearwardly from a forward position to a rear position whereat the mating portion of the housing passes through the passage (33) in the shutter for engaging the mating portion of the complementary connecting device.

The subject-matter of claim 1 therefore differs from this known electrical connector in that said plurality of stopper tabs are bent downwardly from a top front edge of a top wall.

The problem to be solved by the present invention may therefore be regarded as to provide an alternative configuration of said stopper tabs to hold the shutter in the cavity.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

the feature "plurality of stopper tabs bent downwardly from a top front edge of a top wall" is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

2.

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claim 9, which therefore is also considered not inventive.

3.

Dependent claims 2-8 and 10 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons as follows:

features of claims 2-8 and 10 are known from D1.

Re Item VII

Certain defects

Amended claims 9 and 10 are wrongly numbered as 14 and 15.

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1. An electrical connector (30) for mating with a complementary connecting device (12) having a mating portion (12b), comprising:

a shell (34) having an internal cavity (40), a front opening (40a) for receiving the mating portion of the complementary connecting device inserted into the cavity;

a housing (32) mounted in at least a rear portion of the shell and having a mating portion (68) extending forwardly into the cavity, and a plurality of stopper tabs (48) bent downwardly from a top front edge of a top wall (34a); and

a shutter (36) slidably mounted in the internal cavity of the shell and formed with a passage (58) for receiving the forwardly extending mating portion of the housing therethrough, whereby when the mating portion (12b) of the complementary connecting device (12) is inserted into the cavity (40) through the front opening in the shell, the shutter (36) is slidably pushed rearwardly from a forward position to a rear position whereat the mating portion (68) of the housing (32) passes through the passage (58) in the shutter for engaging the mating portion of the complementary connecting device.

2. The electrical connector of claim 1, including spring means (38) for biasing the shutter (36) toward its forward position.

3. The electrical connector of claim 2 wherein said spring means comprises a coil spring (38) extending in a direction (B) between the housing (32) and the front opening in the shell (34).

4. The electrical connector of claim 3 wherein said shutter (36) is elongated, and including a pair of said coil springs (38) at opposite ends of the shutter and a plurality of stopper notches (62) formed in a top front edge of the shutter for receiving stopper tabs (48) of shell (34).

5. The electrical connector of claim 3 wherein the shell (34) and the coil spring (38) are of metal material and said housing (32) includes a through hole (66) through which a rear end of the coil spring extends into engagement with a portion

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(56) of the shell.

6. The electrical connector of claim 3 wherein said shutter (36) includes a rearwardly extending post (60) projecting into a front end of the coil spring (38).

7. The electrical connector of claim 1, including front -to-rear interengaging guide means (50,65) between the shell (34) and the shutter (36).

8. The electrical connector of claim 7 wherein said guide means comprise a guide slot (50) in the shell (34) receiving a guide boss (65) on the shutter (36).

14. An electrical connector (30) for mating with a complementary connecting device (12) having a mating portion (12b), the connector being adapted for mounting on a printed circuit board, comprising:

a metal shell (34) having an internal cavity (40), a front opening (40a) for receiving the mating portion of the complementary connecting device inserted into the cavity, and a plurality of stopper tabs (48) bent downwardly from a top front edge of a top wall (34a), the shell having a grounding portion (46) for connection to the printed circuit board;

a housing (32) mounted in at least a rear portion of the shell and having a through hole (66);

a shutter (36) slidably mounted in the internal cavity of the shell for movement between a forward position substantially closing the front opening of the cavity and a rear position, the shutter including a plurality of stopper notches (62) formed in the top front edge of the shutter for receiving stopper tabs (48) of shell (34) when the shutter is in the forward position; and

a metal spring (38) for biasing the shutter toward its forward position, the metal spring extending through the through hole (66) in the housing and into engagement with the metal shell.

15. The electrical connector of claim 14 wherein said spring is a coil spring (38) extending in a front-to-rear direction, with a rear end of the coil spring

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extending through the through hole (66) in the housing (32) and into engagement with a rear portion (56) of the metal shell (34).

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